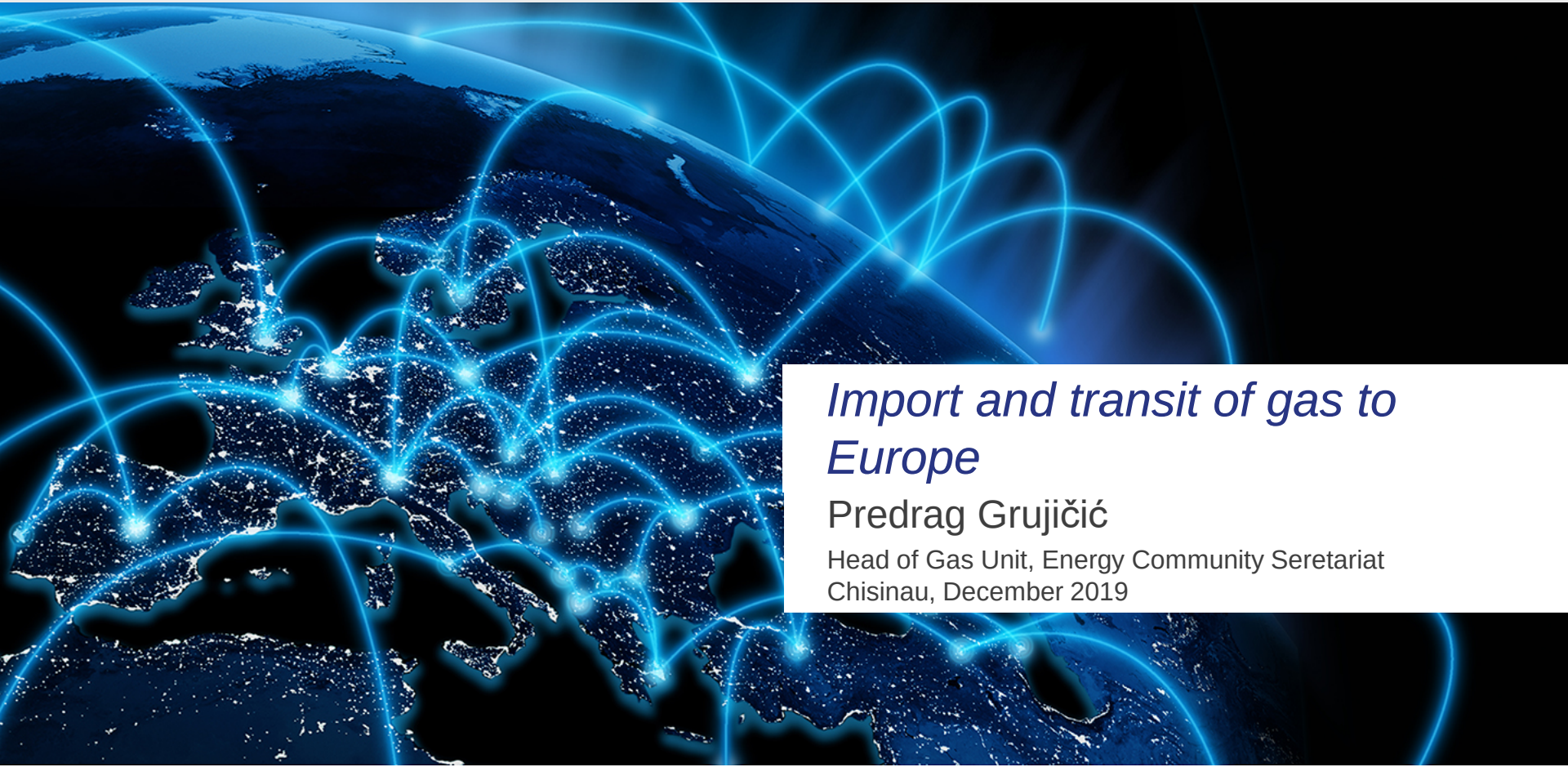


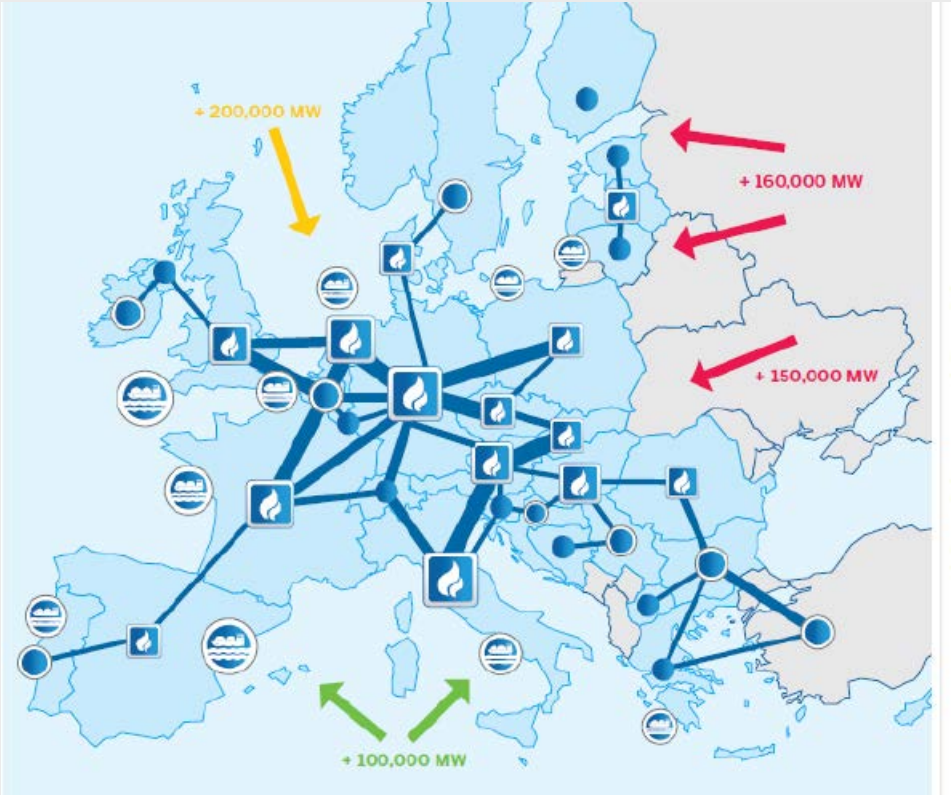
Import and transit of gas to Europe

Predrag Grujičić

Head of Gas Unit, Energy Community Seretariat

Chisinau, December 2019

Europe's gas infrastructure - to build or not?



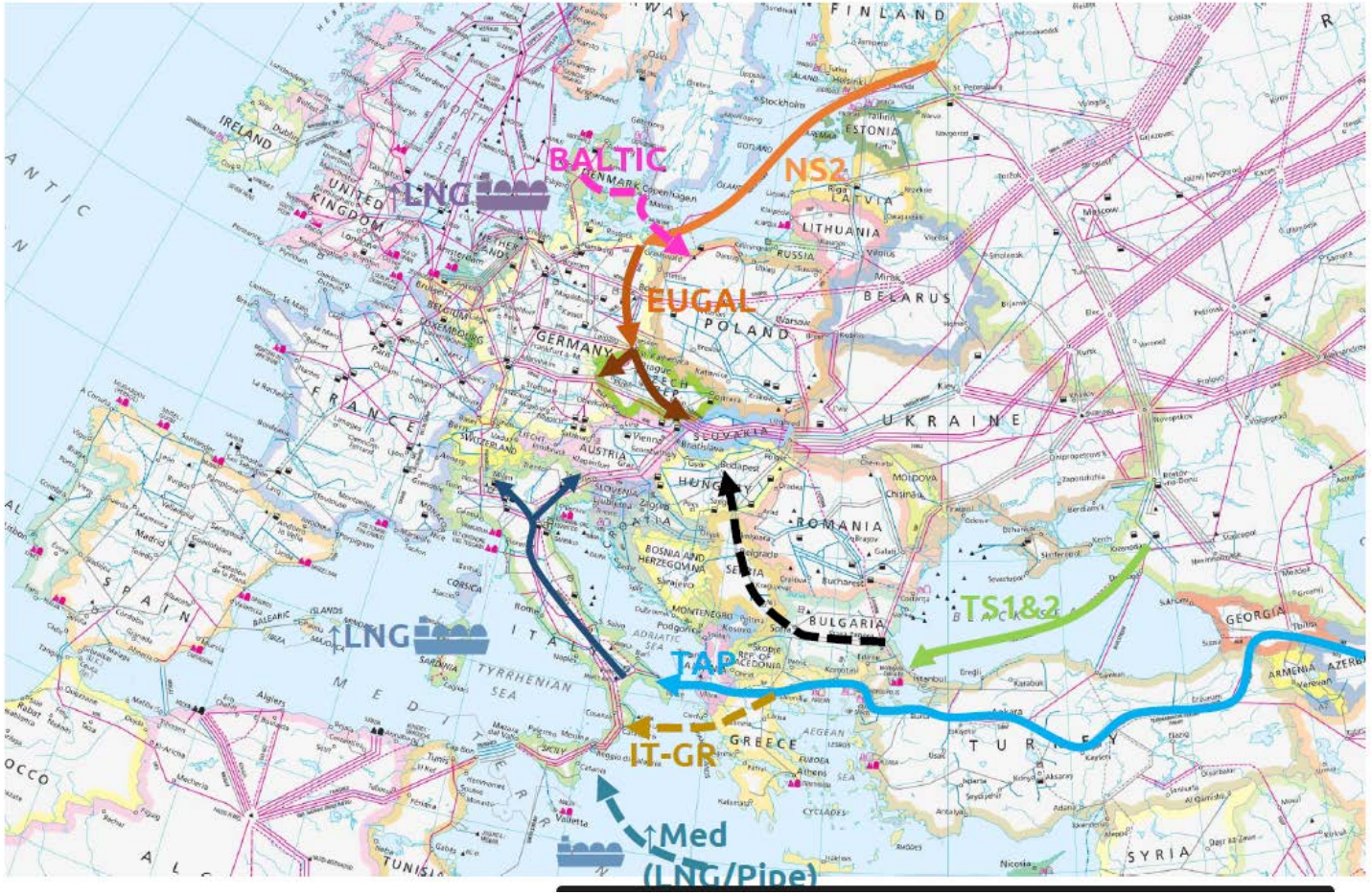
Europe's infrastructure ensure ample level of market integration in many parts of Europe

Pipeline import capacity – 450 bcm
LNG regas: 212 bcm
Storage: 113 bcm

New infra – construction on-going 100 bcm (25 bn euro)

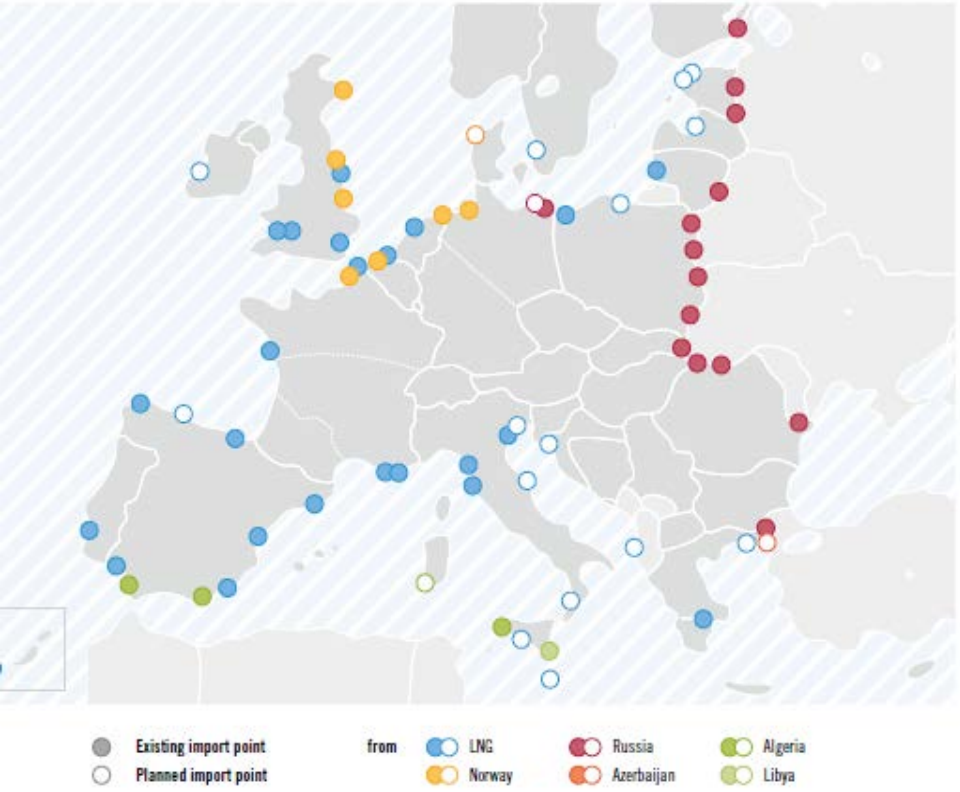
New infra planned – 40 bcm

Import/transit infrastructure under construction



Source: Snam

Existing/planned import pipeline and LNG points



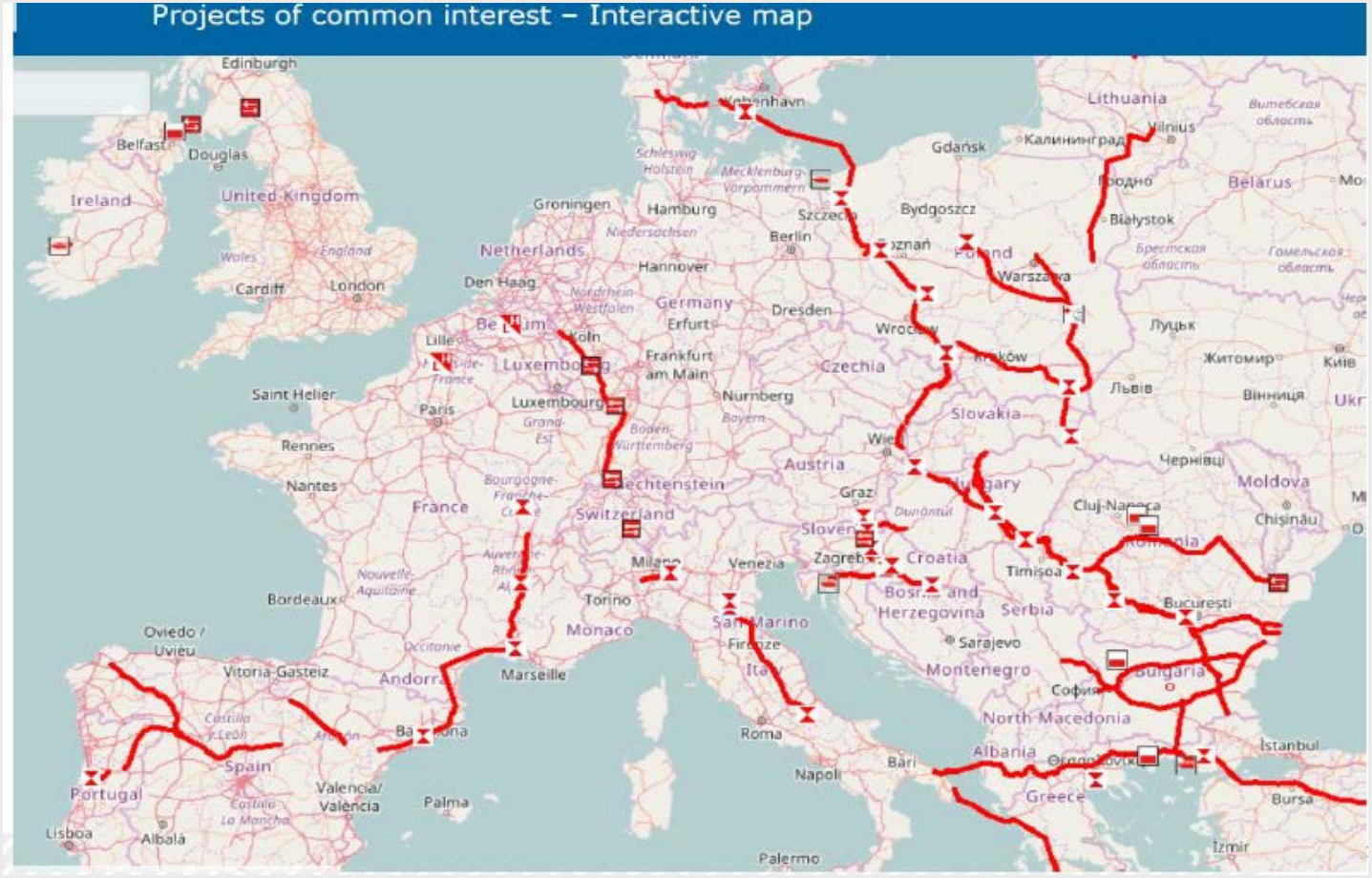
EXISTING IMPORT ROUTES OF GAS

Source	Route	Sub-route
LNG	United Kingdom	
	The Netherlands	
	Belgium	
	France	
	Spain	
	Portugal	
	Italy	
	Greece	
	Poland	
NORWAY	United Kingdom	
	Germany	
	The Netherlands	
	France	
	Belgium	
RUSSIA	Finland	
	Germany	
	Estonia	
	Latvia	
	Belarus	Lithuania
		Poland
	Ukraine	Poland
		Slovakia
		Hungary
		Romania
ALGERIA	Spain	
	Italy	
LIBYA	Italy	

Table 5.1: Existing import routes of gas[1)]

Source: ENTSOG

Projects of common interest II



Source: ENTSOG

Case study: Ukraine

22 160 km ‘transit’ pipelines
16 390 km national pipelines

Transmission capacity:
Input 288 Bcm / output 142,1 Bcm

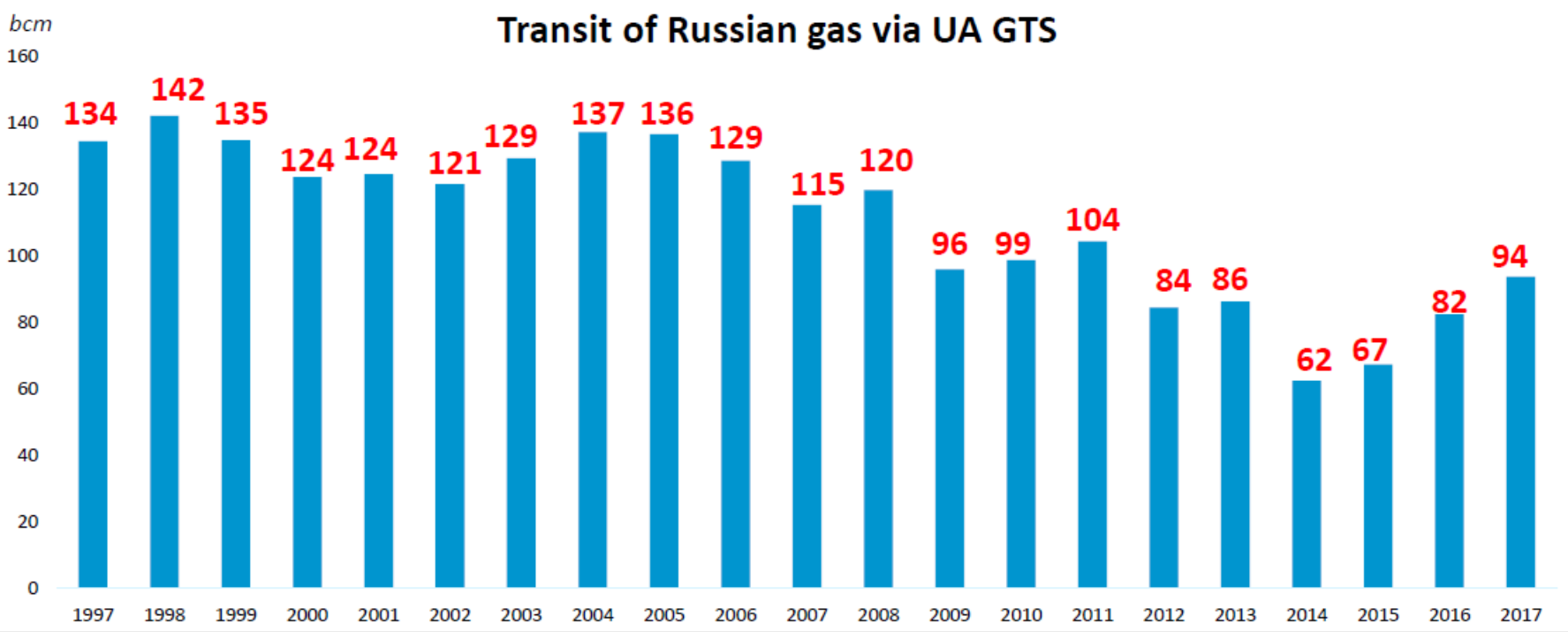
12 UGSs with
total capacity 31 Bcm*

* Without Crimea

Production 20,5 Bcm*
(82% by Naftogaz)

Households, district heating
> 50% of consumption

Ukraine's transit

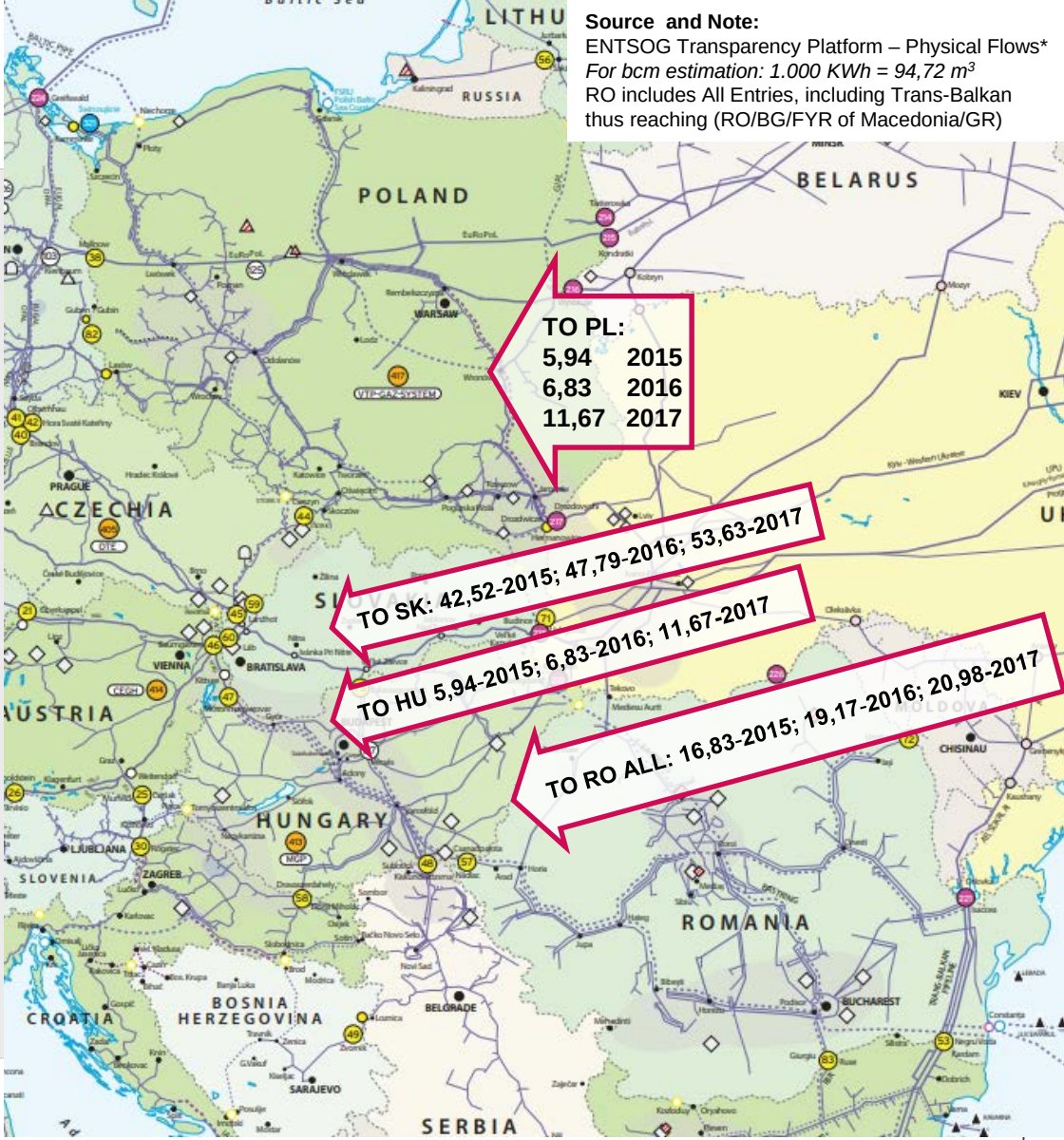


UA transit flows (bcm/y)

Total Transit from Ukraine
(Exit UA Physical Flow)
2015: 68,98 bcm
2016: 79,28 bcm
2017: 91,00 bcm

Total Transit to SR & BiH
(Exit HU Physical Flow)
2015: 1,89 bcm
2016: 1,97 bcm
2017: 2,37 bcm

Source and Note:
ENTSOG Transparency Platform – Physical Flows*
For bcm estimation: 1.000 KWh = 94,72 m³
RO includes All Entries, including Trans-Balkan thus reaching (RO/BG/FYR of Macedonia/GR)

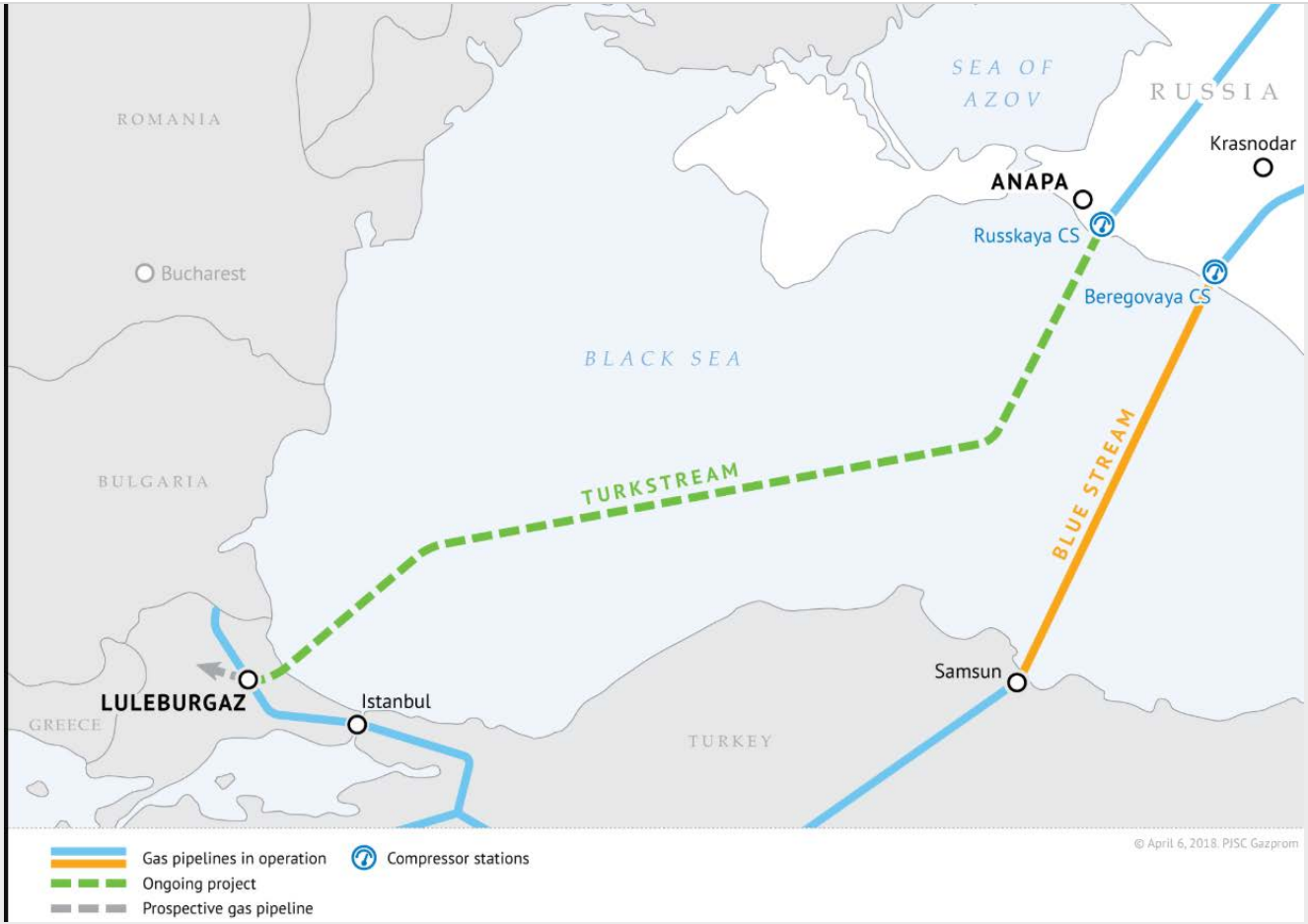


Nord Stream II Facts and figures

Country	Length [km]	Regulation	Permitting Status
Russia	114	– Federal laws about Internal Sea Water, Territorial Sea, Continental Shelf	✓ 14 August 2018
		– Decree of the government	✓ 7 June 2018
Finland	374	– Water Act	✓ 12 April 2018
		– Finnish Act on the EEZ	✓ 5 April 2018
Sweden	511	– Act on the Continental Shelf	✓ 7 June 2018
Denmark	~140	– Act on the Continental Shelf	Two routes ready to permit
Germany	85	– Energy Industry Act	✓ 31 January 2018
		– Federal Mining Act	✓ 27 March 2018
Total		**8 permits**	**7 out of 8**

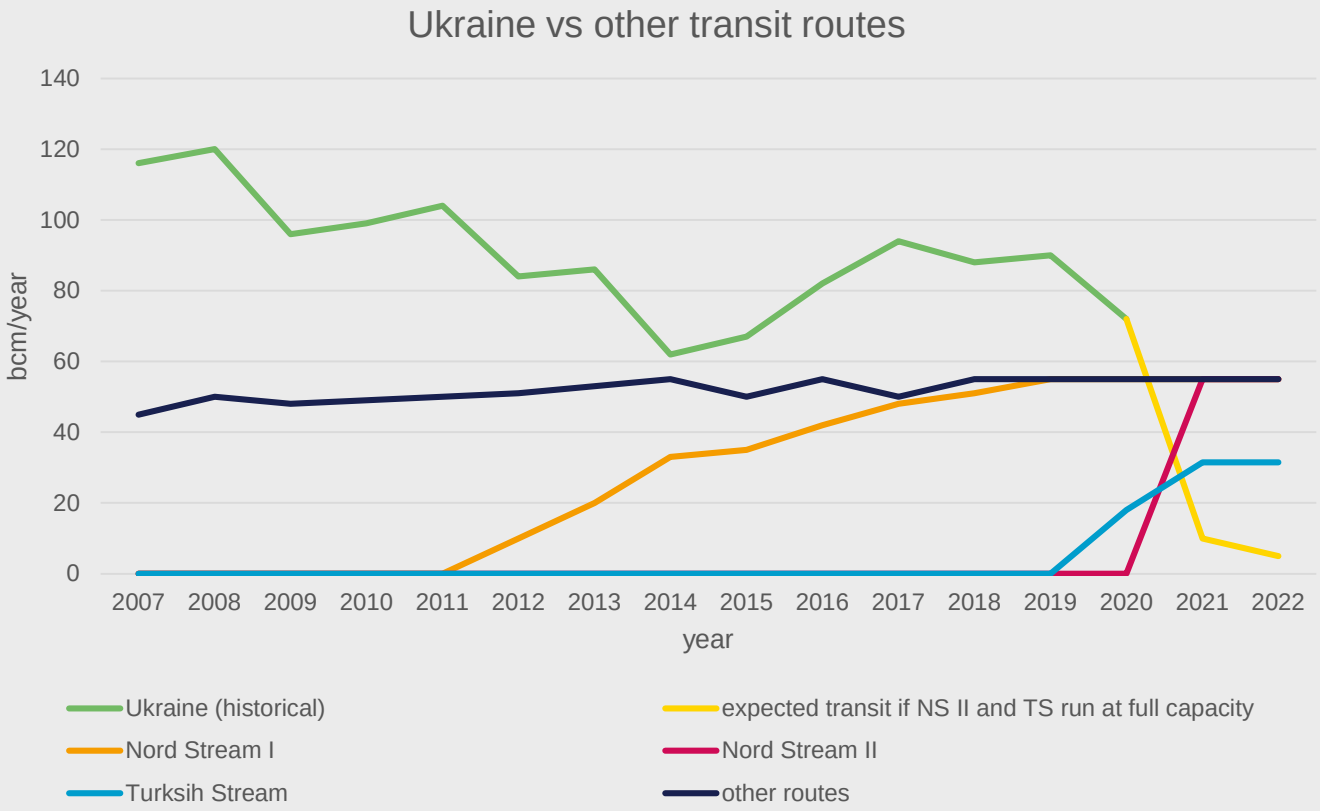
Source:
http://www.gazprom.com/about/production/projects/pipelines/built/nord-stream2/
https://www.nord-stream2.com/

Case study - Turkish stream – 2 strings = 31,5bcm



Source: Gazprom

Ukraine and new transit routes



Nord Stream II and Turk Stream substitute almost all Ukraine transit

In a very simplified way:

- Assuming that NSII and Turk Stream would substitute Russian transit via Ukraine 1-on-1 and
- Their load factor is ~91% (50bcm/y + 29bcm/y) in the long term and that
- All NS II quantity goes to Western Europe (including AT/CZ/DE) and that Turk Stream I is for Turkey and Turk Stream II is for Europe
- Belarus transit remains intact,

The remaining transit via Ukraine could stand at 10 bcm.

Total Transit from Ukraine – NSII @ 91% Load Factor (Exit UA Physical Flow)
2016: 79,28 – 79 = **0,28 bcm**
2017: 91,00 – 79 = **11,00 bcm**

This would enable Gazprom to have a) enough spare capacity to increase its supplies to Europe b) stronger negotiation position towards Poland and Ukraine re. transit c) back up transit routes for any scenarios

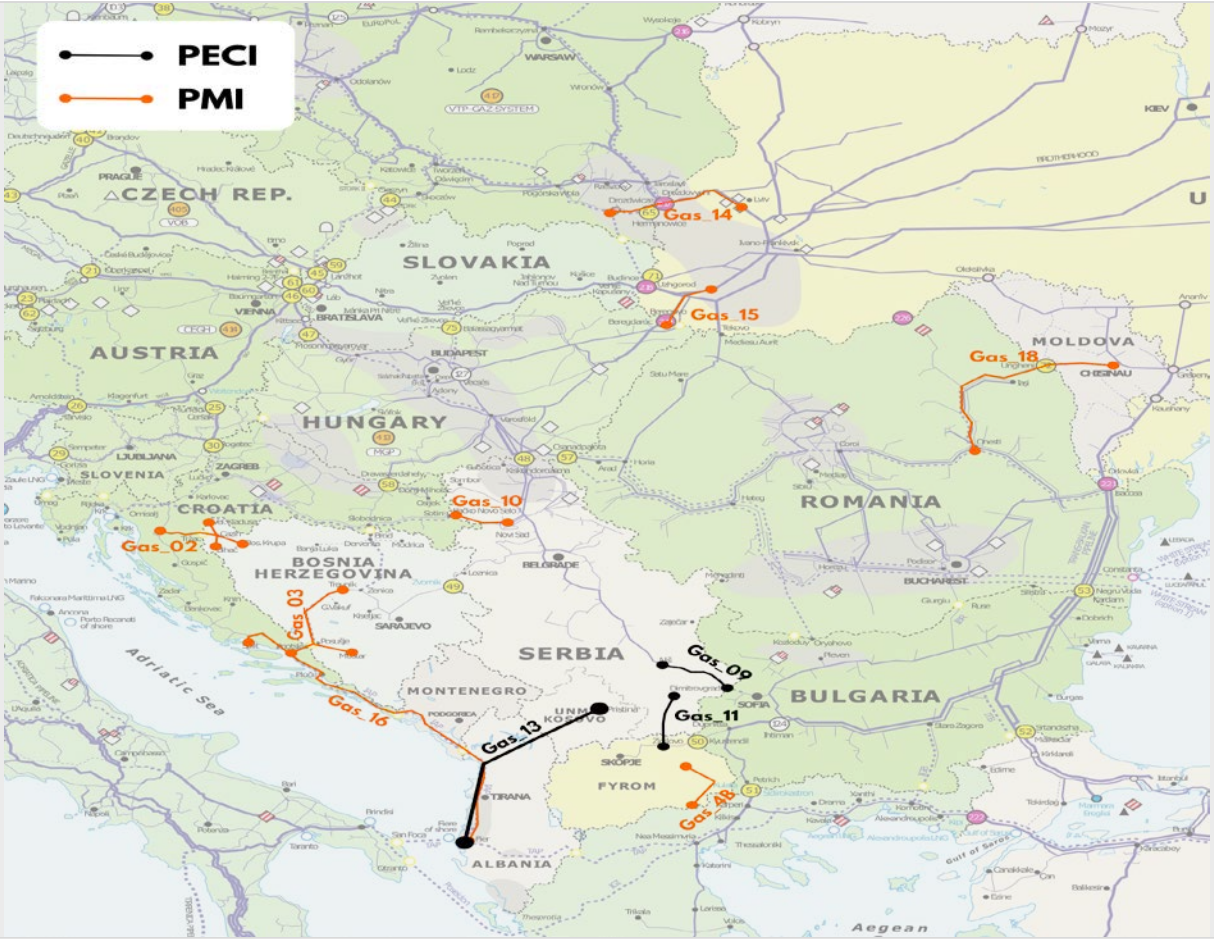
Gas infrastructure in the Energy Community

Transmission pipelines:
Ukraine – 38800 km
Moldova – 1570 km
Serbia – 2423 km
Georgia – 1968 km
BiH - 234 km
fYR of Macedonia- 181 km

UGS:
Ukraine 31 Bcm
Serbia 0,45 Bcm

LNG: 0

The final PECI/PMI lists for gas



Natural gas projects (2)